

**REMARKS**

The Office Action mailed February 27, 2004, has been received and reviewed. Claims 1 through 12, and 32 through 68 are withdrawn from consideration as being drawn to a non-elected invention and have been canceled. Applicants acknowledge the restriction requirement in the above-referenced application, and affirm the election to prosecute the claims of Group II, claims 13 through 31, without traverse.

Claims 69-80 have been added. Claims 15 and 22 have been cancelled.

Therefore, claims 13, 14, 16-21, 23 through 31, and 69 through 80 are currently pending in the application, and are currently under examination. Claims 13 through 31 stand rejected. Applicants have amended claims 13, 14, 16-21, 23 through 31 and respectfully request reconsideration of the application as amended herein.

**35 U.S.C. § 102(e) Anticipation Rejections**

Anticipation Rejection Based on U.S. Patent No. 6,197,168 to Matsunaga et al.

Claims 13 and 14 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,197,168 to Matsunaga et al. (hereinafter "Matsunaga"). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Matsunaga discloses an electrochemical stain prevention apparatus of a submerged structure comprising a stain prevention surface formed of a conductive film disposed on the surface of a submerged structure. The conductive film is configured for not generating chlorine even if energized by a potential of 5 V vs. SCE or less.

More particularly, Matsunaga discloses an electrochemical stain prevention apparatus including two *electrically isolated* electrodes. The electrodes may comprise a conductive film that is disposed on the interior of a pipe. (FIG. 3). A voltage of a magnitude capable of killing

aquatic organisms is applied between the electrodes. More particularly, referring to FIG. 1, a power supply unit may be used to apply a positive potential is applied to the conductive film 2 formed on the submerged structure, and a negative potential to the conductive film 2 formed on the counter electrode substrate. Similarly, in reference to FIG. 3, a power supply unit may be used to apply a positive potential to conductive film 2a, and a negative potential to the conductive film 2b, wherein the conductive film 2a and conductive film 2b are electrically separated by a fixed gap 8.

Matsunaga further discloses that the positive potential and the negative potential are periodically applied to the conductive film by periodically changing the polarities of the applied potentials, whereby aquatic organisms adhered to the surface of the conductive film can be killed and removed.

Matsunaga also discloses a sprayer for spraying a metal nitride by a low-temperature spraying method. Particularly, referring to FIG. 29 of Matsunaga, the sprayer comprises a high-frequency spray gun 31, wherein spray metal wires 36a and 36b, which are electrically energized at different polarities via high-frequency direct current power supply 32 contact one another at a spray metal wire melting portion 39 and are melted.

Matsunaga discloses that a nitrogen-containing gas is fed from a container 41 filled with a nitrogen gas and an ammonia gas to a cooler 34 through a connecting pipe 42 to cool the same, and it is compressed with a compressor 33. The cooled nitrogen-containing compressed gas introduced into the spray gun 31 is fed to the spray metal wire melting portion 39 also through a gap 44. The molten metal particles 45 in the spray wire melting portion 39 are contacted with the high-speed stream of the cooled nitrogen-containing compressed gas fed through the gap 40 and the cooled nitrogen-containing compressed gas fed through the gap 44 in the arrow direction, and the surfaces of the particles are nitrified to form nitrides. The nitrified molten metal particles 45 are flown toward a substrate 46 (substrate of a submerged structure on which a sprayed coating film is to be formed) along with the high-speed stream of the cooled nitrogen-containing compressed gas from the gap 40. The molten metal particles 45 are, when flown along with the high-speed stream, abruptly cooled to be in a supercooled state. Since the molten metal particles 45 in this supercooled state are in the molten state at a low temperature, these are struck against

the surface of the substrate 46, and piled on that surface to form a sprayed coating film of the metal nitride. *See generally* Column 17, lines 52-67; Column 18, lines 1-17.

Independent claim 13, as presently amended, recites, *inter alia*, “generating a reduced air pressure proximate the spray gun wherein the reduced air pressure zone is movable with the spray gun.”

Applicants respectfully submit that Matsunaga does not appear to disclose generating a zone of reduced air pressure proximate the spray gun wherein the reduced air pressure zone is movable with the spray gun.”

Accordingly, Applicants respectfully request reconsideration and allowance of independent claim 13.

Dependent claim 14 is allowable as depending from independent claim 13, which is allowable.

Applicants respectfully request reconsideration and allowance of dependent claim 14.

### **35 U.S.C. § 103(a) Obviousness Rejections**

Obviousness Rejection Based on U.S. Patent No. 6,197,168 to Matsunaga et al., as applied to claim 14 above, in further view of U.S. Patent No. 5,024,423 to Matsumoto et al.

Claim 15 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsunaga as applied to claim 14 above, in further view of U.S. Patent No. 5,024,423 to Matsumoto et al.

Applicants respectfully submit that dependent claim 15, has been cancelled; therefore, the rejection is moot.

Obviousness Rejection Based on U.S. Patent No. 6,197,168 to Matsunaga et al. and U.S. Patent No. 5,024,423 to Matsumoto et al., as applied to claim 15 above, and further in view of U.S. Patent No. 4,704,985 to Rubinstein

Claims 16, 19 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsunaga et al. and U.S. Patent No. 5,024,423 to Matsumoto et al. (hereinafter “Matsumoto”), as applied to claim 15 above, and further in view of U.S. Patent No. 4,704,985 Rubinstein (hereinafter “Rubinstein”). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The disclosure of Matsunaga is discussed hereinabove.

Matsumoto discloses a tubular body for use in a semiconductor diffusion furnace.

Particularly, Matsumoto discloses that the inner tube may typically comprise silicon carbide and may have an insulating layer formed over the entire outer surface thereof by the method of spray deposition. More particularly, a mass of powder such as powder alumina, silica, zirconia, and zircon or a mixture thereof is instantaneously melted by means of a spray gun and blown into mist with the aid of blowing gas. The mist is applied to the tubular member on the outer surface to form the insulating layer. Since the tubular member is often a length of tube, it is preferably rotated about its axis during spraying, substantially eliminating a variation in thickness of the insulating layer. To enhance the adhesion of the sprayed layer to the underlying substrate or tubular member, preferably the outer surface of the tubular member is previously roughened as by sand blasting. The preferred spraying process is plasma spraying capable of delivering molten particles at a high velocity. For a particular type of plasma spraying, operating conditions may be in accord with the conventional practice. *See generally* Column 2, lines 40-68; Column 3, lines 1-12.

Rubinstein discloses a spray gun mover including a lance extension having a coating apparatus (e.g., a spray gun) mounted on a distal end for insertion into a rotating drum or barrel along the axis of rotation. The lance extension is mounted on a movable lance frame by means of forward and rearward strut sets pivoted in pillow blocks at lower ends to a stationary support frame and at upper ends to the movable lance frame. The lance apparatus is actuated to extend

the first coating apparatus into the rotating drum along its axis where the coating apparatus sprays the interior surface. The second coating apparatus is moved along and parallel to the rotating outer surface and is operable to spray it if desired.

Rubinstein discloses that there are no moving parts within the drum or barrel, nor near the spray or overspray area. Rubinstein states, "The only significant moving parts are the pivots which comprise easily replaceable and inexpensive pillow blocks disposed outside the actual coating station and away from any spray pattern or overspray area." Column 2, lines 27-31. Thus, the invention of Rubinstein is directed toward problems associated with placement of moving parts within an overspray region, particularly within a closed area, such as a drum or barrel.

The Office Action indicates that "It would have been obvious to one of ordinary skill in the art to modify the method of Matsunaga in view of Matsumoto so as to spray the insulating material according to the method of Rubinstein." Page 6, paragraph 13.

Applicants respectfully submit that it would not be obvious to one of ordinary skill in the art to modify the method of Matsunaga in view of Matsumoto so as to spray the insulating material according to the method of Rubinstein.

Particularly, one of ordinary skill in the art would not be motivated to make the proposed combination because Matsunaga does not teach or suggest utilizing a high-temperature spray method for depositing insulative material. Rather, Applicants respectfully submit that it appears that the teachings of Matsunaga suggest low-temperature spraying methods for depositing insulative layers that are suitable for practicing the respective inventions thereof.

More specifically, Matsunaga teaches and suggests a low-temperature process for spraying the insulative material. While Matsunaga discloses that ceramics such as alumina, zirconia, titanium oxide, or silicon oxide may form coating it appears that Matsunaga discloses that these constituents are sprayed via a low temperature process.

Matsunaga states, at Column 16, line 61 – Column 17, line 13 that

"a resin layer 1f containing an inorganic powder having a particle diameter of from 10 to 200  $\mu\text{m}$  is used. The inorganic powder contained in the resin layer 1f includes alumina, zirconia, silicon oxide and titanium oxide, and these can be used alone or in admixture of two or more. The inorganic

powder is mixed within the range of from 10 to 300% by weight based on the solid content of the resin used. As the resin used in the resin layer 1f, a two component curable unsaturated polyester resin, an acrylic-urethane resin, a polyester-urethane resin, a silicone-urethane resin, a silicone-acrylic resin, an epoxy resin, a thermosetting melamine-alkyd resin, a melamine-acrylic resin, a melamine-epoxy resin, an acrylic resin, an acrylic-urethane resin and the like are mentioned. These can be used alone or in admixture of two or more. This resin layer 1f can be formed by coating the resin by a spraying method, a brush coating method, a roll coater method or the like, and then conducting air-drying or heat-drying.”

Therefore, Matsunaga expressly discloses a method of mixing a powdered ceramic insulative material with a resin, wherein the mixture is sprayed onto a substrate.

Thus, any of the above-referenced resins that Matsunaga teaches and suggests would not be suitable for the relatively high-temperature spraying process disclosed by Matsumoto. Thus, Applicants respectfully submit that Matsunaga teaches away from, or is incompatible with Matsumoto.

Therefore, Applicants respectfully submit that there is no motivation to combine Matsunaga with Matsumoto.

Furthermore, it should be noted that Matsumoto teaches and suggests application of an insulative layer to the outer surface of a tubular member rather than the interior thereof. Thus, Applicants respectfully submit that it would not be obvious to one of ordinary skill in the art to modify the method of Matsunaga in view of Matsumoto so as to spray the insulating material according to the method of Rubinstein because the invention of Matsumoto would not benefit from combination with the invention of Rubinstein. Rather, it appears that Matsunaga teaches that the spraying technique for applying the insulative material may be preferably simple. Specifically, by indicating that “a brush coating method” and “a roll coater method or the like” may be employed to deposit the insulative layer, Matsunaga indicates that either brush coating or roller coating may be interchangeable with spraying; thus, Matsunaga teaches away from the proposed spraying system of Rubinstein.

Applicants respectfully remind the Examiner that there must be some teaching, suggestion or motivation in the art, and not in Applicants’ disclosure, supporting the Examiner's

combination of documents. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1599-1600 (Fed. Cir. 1988).

Applicants respectfully submit that there is no motivation to combine the references.

The Office Action appears to indicate that the motivation may be found in Rubinstein by stating that “One of ordinary skill in the art would have been motivated to do so by the desire and expectation of successfully coating the interior surface of the hollow article with the insulating material utilizing an apparatus with a long service life, little wear, and few moving parts.” Page 6, paragraph 13.

Similarly, Rubinstein suggests that “A further objective of the invention has been to provide an improved gun mover of simple construction, having a lengthy service life with few moving parts and little wear.” Column 1, lines 39-42.

However, Matsunaga does not even suggest an apparatus for spraying the *insulative* resin mixture disclosed therein. Rather, Matsunaga merely indicates that the spraying technique for applying the insulative material may be employed. Therefore, there is no reason to assume that the problems addressed by the invention of Rubinstein are even present in the spraying process of Matsunaga. Accordingly, one of ordinary skill in the art would not be motivated to combine the references.

Turning to the combination of Matsumoto with Rubinstein, in greater detail, the advantages of Rubinstein are purported to be occur as a result of the mechanical structure of the lance extension apparatus. Rubinstein suggests that overspray may affect conventional spraying apparatuses deleteriously. Rubinstein explains “Such units have several inherent disadvantages. For example, they have many moving parts which tend to wear and require frequent maintenance. Moving parts extend into the drums (sic) being sprayed and overspray can build up on the parts in an undesirable fashion, making them difficult to clean and interfering with their movement.” Column 1, lines 26-33. Rubinstein then states, “Accordingly, it has been an objective of this invention to provide an improved reciprocator or gun mover for coating interior surfaces of cylindrical objects like drums or barrels, and having no movable parts within the object being coated.” Column 1, lines 34-38.

Therefore, since Matsumoto teaches and suggests only spraying an insulative coating onto the outer surface of a cylindrical body, the above-mentioned object of Rubinstein would not

pertain thereto, since there would not be movable parts within a cylindrical object as taught by Rubinstein. Thus, one of ordinary skill in the art would not be motivated to combine the teachings of Rubinstein with Matsumoto.

Accordingly Applicants respectfully submit that the desirability of the combination of Matsunaga, Matsumoto, and Rubinstein has not been documented. “The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). See also *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992) (holding that “although a prior art device may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.”).

Accordingly, Applicants respectfully submit that claims 16 and 19 are each allowable because the proposed combination of Matsunaga, Matsumoto, and Rubinstein does not establish a *prima facie* case of obviousness.

Further, claim 16 is allowable as depending from independent claim 13, which is allowable. Applicants respectfully request reconsideration and allowance of dependent claim 16.

Applicants respectfully request reconsideration and allowance of claim 16.

Further, claim 19 is allowable as depending indirectly from independent claim 13, which is allowable. Applicants respectfully request reconsideration and allowance of dependent claim 19.

Therefore, Applicants respectfully request reconsideration and allowance of claim 19.

Obviousness Rejection Based on U.S. Patent No. 6,197,168 to Matsunaga et al., U.S. Patent No. 5,024,423 to Matsumoto et al., and U.S. Patent No. 4,704,985 to Rubinstein, as applied to claim 16 above, and further in view of U.S. Patent No. 5,573,814 to Donovan

Claims 17 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsunaga, Matsumoto, and Rubinstein, as applied to claim 16 above, and further in view of U.S. Patent No. 5,573,814 to Donovan (hereinafter “Donovan”). Applicants respectfully traverse this rejection, as hereinafter set forth.



The teachings of Matsunaga, Matsumoto, and Rubinstein as well as the proposed combination thereof, are discussed above.

Donovan teaches a method of masking one or more extremities of a cylinder bore from internal thermal spraying, when using a rotary gun inserted from one end of the bore, by essentially the steps of: (a) supporting one or more inflatable mask members adjacent an end of the bore wall; (b) pressurizing the inflatable mask member to expand and annularly engage an end of the bore, the mask being constituted of an inflatable and collapsible air tight bag of heat resistant (fiberglass) cloth coated on opposite sides with a sacrificial heat resistant non-stick coating (silicone). The inflatable mask may further include a bore for collection of over-spray. A vacuum exhaust may be operably coupled to the inflatable mask for drawing over-spray through the bore thereof.

Claim 17, as presently amended, recites, *inter alia*, "wherein generating the zone of reduced air pressure adjacent the spray gun comprises drawing overspray of the insulating material in a direction generally opposite to the direction of spraying."

As shown in FIGS. 1 and 2 of Donovan, Applicants respectfully submit that the directions of the arrows which illustrate the directions in which overspray is drawn are not generally opposite to the direction spraying.

Further, Claim 17 is allowable as depending from independent Claim 13, which is allowable.

Accordingly, Applicants respectfully request reconsideration and allowance of Claim 17.

Claim 18, as presently amended, recites, *inter alia*, "wherein generating the zone of reduced air pressure adjacent the spray gun comprises transporting overspray through the extension arm."

Applicants respectfully submit that none of the references cited in the rejection teach or suggest the limitation of Claim 18. Rather, Applicants respectfully submit that Rubinstein does not teach or suggest transporting overspray through the extension arm. Also, Donovan does not teach or suggest transporting overspray therethrough. Rather, Donovan teaches that the inflatable mask may be affixed within the end of a bore and overspray may be drawn therethrough.

Since the references cited in the rejection fail, either alone or in combination, to teach or

suggest the claim limitation recited in dependent claim 18, Applicants respectfully submit that claim 18 is allowable.

Further, Claim 18 is allowable as depending indirectly from independent Claim 13, which is allowable.

Applicants respectfully request reconsideration and allowance of dependent Claim 18.

Obviousness Rejection Based on U.S. Patent No. 6,197,168 to Matsunaga et al., U.S. Patent No. 5,024,423 to Matsumoto et al., and U.S. Patent No. 4,704,985 to Rubinstein, as applied to claim 19 above, and further in view of U.S. Patent No. 3,740,522 to Muehlberger

The Office Action indicates that Claims 20, 22, 23, and 16 through 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsunaga, Matsumoto, and Rubinstein, as applied to claim 19 above, in further view of U.S. Patent No. 3,740,522 to Muehlberger (hereinafter "Muehlberger"). Applicants respectfully traverse this rejection, as hereinafter set forth.

It appears that, since claims 16, 17, 18, and 19 (as well as claims 24 and 25) are rejected by other combinations of references, the Office Action may have intended to indicate that Claims 20, 22, 23, and ~~26~~ through 28 are rejected over Matsunaga, Matsumoto, and Rubinstein, as applied to claim 19 above, in further view Muehlberger. If this assumption is not correct, Applicants respectfully request clarification of the rejection.

The teachings of Matsunaga, Matsumoto, and Rubinstein, as well as the proposed combination thereof, are discussed above.

Muehlberger teaches a water-cooled plasma torch. Gas is passed to the arc chamber through an annulus and through flutes and bores in a temperature-resisting sleeve, such sleeve operating as a spacer and insulator. Cooling water cooling lines are provided to pass cooling water in series for cooling of both the anode and the cathode, the water flowing not only through such elements and through various tubes but also through the housings. The rear housing and the two inner tubes form an assembly which extends to a cathode holder for the removable cathode. Such cathode is indented inwardly from injector ports in the sleeve, whereby gas flows uniformly and efficiently around the cathode to the arc chamber or passage.

Muehlberger also teaches a method of spray coating an interior of a pipe. Specifically, Muehlberger teaches that an elongated torch is fixedly mounted generally coaxially of the pipe and that the torch may be any desired length, for example, 10 or 20 feet. In operation, the torch is started (by high-frequency starting means, or other means) and the apparatus 146 is operated to rotate the pipe 144 about its axis and to feed the pipe at a predetermined speed along its axis. The pipe interior is thus coated as desired. Thereafter, the pipe is removed from the apparatus 146 and reversed, so that the other half of the pipe may be coated. Pipe lengths up to forty feet or more may thus be interiorly spray-coated with corrosion-resistant or wear-resistant material. *See generally* Col. 13, lines 10-30; FIG. 12.

Applicants respectfully submit that the teachings of Muehlberger in combination with Rubinstein are inconsistent. Particularly, Muehlberger teaches that the spray gun is stationary while the pipe is moved longitudinally and rotated. In contrast, Rubinstein teaches an apparatus for moving a spray gun by way of a structure of lances. Thus, it appears that Muehlberger and Rubinstein teach contrasting methods and apparatus for spray coating an interior of a hollow article. Therefore, the invention of Rubinstein would be superfluous in combination with Muehlberger.

Further, the invention of Rubinstein addresses problems associated with moving parts within a hollow article to be coated, or at least within an overspray region. Applicants respectfully submit that Muehlberger does not teach or suggest such problems during use of the invention taught and suggested therein. Accordingly, one of ordinary skill in the art would not be motivated to combine Muehlberger with Rubinstein.

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 220 U.S.P.Q. 303 (Fed. Cir. 1983), *See also* MPEP § 2141.02. It is respectfully submitted that consideration of Muehlberger in its entirety teaches away from any combination with Rubinstein, and vice-versa. In other words, both references fail to provide any motivation for the attempted combination.

Accordingly, Applicants respectfully submit that claims 20, 22, 23, and 26 through 28 are each allowable because the proposed combination of Matsunaga, Matsumoto, and Rubinstein

does not establish a *prima facie* case of obviousness.

Further, Claim 20 recites, *inter alia*, “cooling the extension arm separately from the thermal spray gun.”

Applicants respectfully submit that none of the references cited in the rejection teach or suggest the limitation of dependent claim 20. The Office Action states, “none of the cited references explicitly state separately cooling the extension arm.”

Since the references cited in the rejection fail, either alone or in combination, to teach or suggest the claim limitation recited in dependent claim 20, Applicants respectfully submit that claim 20 is allowable. “The prior art reference (or references when combined) **must** teach or suggest all the claim limitations.” *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

Further, even assuming, *arguendo*, that the claim limitation were found within at least one of the references, while the Office Action states that one of ordinary skill in the art would be motivated to separately cool the extension arm, the only reference to disclose a thermal spray gun for use in spraying an insulative material appears to teach away from such a configuration.

Matsumoto teaches and suggests spraying an insulative material onto the outer surface of a cylindrical body comprising silicon carbide. The cylindrical body is used for a liner in a diffusion furnace. Because the high-temperature spraying technique is utilized to deposit an insulative layer onto the outer surface of a refractory (i.e., high-temperature) material, it appears that Matsunaga teaches away from any cooling of the spraying apparatus would be necessary or desirable.

For completeness, Matsunaga teaches spraying insulative material in a low-temperature process. Therefore, cooling the extension arm would be unneeded. Similarly, Rubinstein does not teach or suggest cooling of the extension arm.

Accordingly, Applicants respectfully submit that there is no motivation provided within any of the references for cooling the extension arm taught by Rubinstein.

Moreover, claim 20 is allowable as depending from independent claim 13, which is allowable. Accordingly, Applicants respectfully request reconsideration and allowance of claim 20.

Further, claim 22 is allowable as depending from independent claim 13, which is allowable. Accordingly, Applicants respectfully request reconsideration and allowance of Claim 22.

Further, claim 23 is allowable as depending from independent claim 13, which is allowable. Accordingly, Applicants respectfully request reconsideration and allowance of Claim 23.

Further, claim 26 is allowable as depending from independent claim 13, which is allowable. Accordingly, Applicants respectfully request reconsideration and allowance of claim 26.

Further, claim 27 is allowable as depending from independent claim 13, which is allowable. Accordingly, Applicants respectfully request reconsideration and allowance of claim 27.

Further, claim 28 recites, *inter alia*, “cooling the extension arm separately from the thermal spray gun.”

The Office Action states, “none of the cited references explicitly state separately cooling the extension arm.”

Applicants respectfully submit that claim 28 is allowable because none of the references cited in the rejection teach or suggest the limitation. *See In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) (holding that “The prior art reference (or references when combined) must teach or suggest all the claim limitations.”).

Accordingly, since the references cited in the rejection fail, either alone or in combination, to teach or suggest the claim limitation recited in dependent claim 28, Applicants respectfully submit that claim 28 is allowable.

Also, Claim 28 is allowable as depending from independent Claim 13, which is allowable. Accordingly, Applicants respectfully request reconsideration and allowance of Claim 28.

Obviousness Rejection Based on U.S. Patent No. 6,197,168 to Matsunaga et al., U.S. Patent No. 5,024,423 to Matsumoto et al., U.S. Patent No. 4,704,985 to Rubinstein, and U.S. Patent No.

3,740,522 to Muehlberger, as applied to claim 23 above, and further in view of U.S. Patent No. 5,573,814 to Donovan

Claims 24 and 25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsunaga, Matsumoto, Rubinstein, and Muehlberger, as applied to claim 23 above, and further in view of U.S. Patent No. 5,573,814 to Donovan. Applicants respectfully traverse this rejection, as hereinafter set forth.

The teachings of Matsunaga, Matsumoto, Rubinstein, and Muehlberger are discussed hereinabove.

Claim 24 recites, as presently amended, *inter alia*, “wherein generating a zone of reduced air pressure adjacent the spray gun comprises drawing overspray of the conductive material in a direction generally opposite to the direction of spraying.”

As shown in FIGS. 1 and 2 of Donovan, Applicants respectfully submit that the direction of the arrows which illustrate the direction in which overspray is drawn are not generally opposite to the direction spraying.

Further, Claim 24 is allowable as depending from independent Claim 13, which is allowable.

Therefore, Applicants respectfully request reconsideration and allowance of Claim 24.

Claim 25, as presently amended, recites, *inter alia*, “wherein generating the zone of reduced air pressure adjacent the spray gun comprises transporting overspray through the extension arm.”

Applicants respectfully submit that none of the references cited in the rejection teach or suggest the limitation of Claim 25.

Particularly, Applicants respectfully submit that Rubinstein does not teach or suggest transporting overspray through the extension arm.

Further, Applicants respectfully submit that Donovan does not teach or suggest transporting overspray through an extension arm. Rather, Donovan teaches that the inflatable mask may be affixed within the end of a bore and overspray may be drawn therethrough.

Since the references cited in the rejection fail, either alone or in combination, to teach or suggest the claim limitation recited in dependent claim 25, Applicants respectfully submit that

claim 25 is allowable.

Further, dependent claim 25 is allowable as depending from independent claim 13, through claims 24 and 23, for the reasons stated above.

Obviousness Rejection Based on U.S. Patent No. 6,197,168 to Matsunaga et al. as applied to claim 13 above

Claims 29 through 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsunaga et al. (U.S. Patent No. 6,197,168), as applied to claim 13 above. Applicants respectfully traverse this rejection, as hereinafter set forth.

The teachings of Matsunaga are discussed above.

Claim 29, as presently amended, recites, *inter alia*, “flushing the interior of the pipe with cooling air.”

The Office Action acknowledges that Matsunaga “does not explicitly teach flushing the interior area with cooling air.” Page 10.

Applicants respectfully remind the Examiner that **the prior art reference (or references when combined) must teach or suggest all the claim limitations**. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

Since the references cited in the rejection fail, either alone or in combination, to teach or suggest the claim limitation recited in dependent Claim 29, Applicants respectfully submit that claim 29 is allowable.

Also, Claim 29 is allowable as depending from independent Claim 13, which is allowable. Accordingly, Applicants respectfully request reconsideration and allowance of Claim 29.

Claim 30, as presently amended, recites, *inter alia*, “directing the cooling air into the interior of the pipe from at least one cooling air outlet disposed on the extension arm.”

Applicants respectfully submit that the prior art references, alone or in combination, fail to teach or suggest directing the cooling air into the interior of the pipe from at least one cooling

air outlet disposed on the extension arm.

Therefore, Applicants respectfully submit that claim 30 is allowable.

Further, Applicants respectfully submit that Claim 30 is allowable as depending from independent Claim 13, which is allowable. Accordingly, Applicants respectfully request reconsideration and allowance of Claim 30.

Claim 31, as presently amended, recites, *inter alia*, "directing the cooling air into the interior of the pipe from an open end of the pipe."

Applicants respectfully submit that the prior art references, alone or in combination, fail to teach or suggest directing the cooling air into the interior of the pipe from an open end of the pipe.

Therefore, Applicants respectfully submit that claim 31 is allowable.

Further, Applicants respectfully submit that Claim 31 is allowable as depending from independent Claim 13, which is allowable. Accordingly, Applicants respectfully request reconsideration and allowance of Claim 31.



### ENTRY OF AMENDMENTS

The amendments to claims 13, 14, 16-21, 23 through 31 above and new claims 69-80 should be entered by the Examiner because the amendments and new claims are supported by the as-filed specification and drawings.

### CONCLUSION

Claims 13, 14, 16-21, 23 through 31 and 69-80 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



Stephen R. Christian  
Registration No. 32,687  
Attorney for Applicants  
P.O. Box 1625  
Idaho Falls, ID 83415-3899  
Phone: (208) 526-9140  
Fax: (208) 526-8339

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